WHAT IS CLAIMED IS:

1. A computer implemented method for rendering a feather, comprising:

generating a segment of a rachis having a first barb and a second barb;

generating the first barb based on a first barb length; and

generating the second barb based on a second barb length.

2. The method of claim 1 wherein generating a segment is performed as a function of a rachis curve.

3. The method of claim 1 wherein generating a first barb is performed as a function of a first barb curve.

4. The method of claim 3 and further comprising randomly rotating the first barb curve to simulate an external force placed on the first barb.

5. The method of claim 1 wherein generating a first barb further comprises generating a polyline having a number of barb segments.

6. The method of claim 5 and further comprising generating a number of polygons along the barb segments.

7. The method of claim 6 and further comprising texturing each of the polygons.

8. The method of claim 1 and further comprising receiving an input sample feather and wherein the segment of the rachis, the first barb and the second barb are generated based on the sample feather.

9. A computer implemented method for rendering a feather, comprising:

generating a rachis;

generating a plurality of barb line curves extending from and along at least a portion of the rachis; and

providing a textured surface along the plurality of barb line curves.

10. The method of claim 9 and further comprising generating polygons along the plurality of barb line curves.

11. The method of claim 9 and further comprising randomly rotating the barb line curves to simulate an external force placed on the first barb.

12. The method of claim 9 wherein providing a textured surface includes modeling a bi-directional texture function from a sample feather.

13. The method of claim 12 wherein modeling a bi-directional texture function includes modeling a structure of barbs and barbules of the sample feather.

14. The method of claim 9 and further comprising providing a left outline curve and a right outline curve, the left outline curve and right outline curve defining lengths of the barb line curves.

15. The method of claim 9 wherein providing a textured surface includes coloring the textured surface based on a sample feather.

16. A computer implemented method for rendering a feather, comprising:

defining a rachis curve;

defining a left outline curve and a right outline curve;

generating left barbs from the rachis curve to the left outline curve; and

generating right barbs from the rachis curve to the right outline curve.

17. The method of claim 16 wherein generating left barbs is performed as a function of a left barb curve.

18. The method of claim 16 wherein generating right barbs is performed as a function of a right barb curve.

19. The method of claim 16 and further comprising randomly rotating at least some of the left barbs and right barbs to simulate an external force placed on the left barbs and right barbs.

20. The method of claim 16 wherein generating left barbs and generating right barbs further comprise generating polylines having a number of barb segments.

21. The method of claim 20 and further comprising generating polygons along the barb segments.

22. The method of claim 21 and further comprising texturing each of the polygons.

23. The method of claim 16 and further comprising receiving an input sample feather and wherein the rachis curve, the left outline curve, and

the right outline curve are defined based on the sample feather.

24. A computer interface for generating feathers, comprising:

a rachis input module to selectively change a rachis curve;

a barb input module to selectively change a barb curve; and

an outline input module to selectively change an outline curve.

25. The computer interface of claim 24 and further comprising a feather input module for inputting a sample feather.

26. The computer interface of claim 25 wherein the rachis input module generates the rachis curve based on the sample feather.

27. The computer interface of claim 25 wherein the barb input module generates the barb curve based on the sample feather.

28. The computer interface of claim 25 wherein the outline input module generates the outline curve based on the sample feather.

29. The computer interface of claim 24 wherein the rachis input module includes a window illustrating the rachis curve.

30. The computer interface of claim 24 wherein the barb input module includes a window illustrating the barb curve.

31. The computer interface of claim 24 wherein the outline input module includes a window illustrating the outline curve.